

AMENDMENTS TO THE CLAIMS:

The following is a complete listing of the claims.

1.-41. (canceled)

42. (currently amended) A An isolated or recombinant nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:

- a. the ~~encoded~~ sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine residue;
- b. the ~~encoded~~ sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine residue; or
- c. the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, ~~valine, proline~~, phenylalanine, tryptophan, or methionine residues.

43. (currently amended) A recombinant vector comprising a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:

- a. the ~~encoded~~ sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine residue;
- b. the ~~encoded~~ sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine residue; or
- c. the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, ~~valine, proline~~, phenylalanine, tryptophan, or methionine residues.

44. (currently amended) A recombinant host cell comprising a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
- the ~~encoded~~ sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine residue;
 - the ~~encoded~~ sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine residue; or
 - the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, ~~valine~~, ~~proline~~, phenylalanine, tryptophan, or methionine residues.
45. (currently amended) A method of preparing recombinant host cells useful to convert threonine to α -ketobutyrate, the method comprising:
- selecting a host cell;
 - transforming the selected host cell with a recombinant vector, wherein the recombinant vector comprises a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
the ~~encoded~~ sequence encoding a leucine residue at amino acid position 447 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine residue; the ~~encoded~~ sequence encoding a leucine residue at amino acid position 481 of the wild type protein is replaced with a sequence encoding an alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine residue; or the sequence encoding leucine residues at amino acid positions 447 and 481 of the wild type protein are independently replaced with sequences encoding alanine, isoleucine, ~~valine~~, ~~proline~~, phenylalanine, tryptophan, or methionine residues; and
 - obtaining recombinant host cells.

46. (currently amended) A transgenic plant, the genome of which comprises a nucleic acid sequence encoding a threonine deaminase protein ~~effective to catalyze~~ capable of catalyzing the conversion of threonine to α -ketobutyrate, wherein:
- a. the encoded leucine residue at amino acid position 447 of the wild type protein is replaced with alanine, isoleucine, valine, ~~proline~~, phenylalanine, tryptophan, or methionine;
 - b. the encoded leucine residue at amino acid position 481 of the wild type protein is replaced with alanine, isoleucine, ~~valine~~, proline, phenylalanine, tryptophan, or methionine; or
 - c. the leucine residue at amino acid positions 447 and 481 of the wild type protein are independently replaced with alanine, isoleucine, ~~valine~~, ~~proline~~, phenylalanine, tryptophan, or methionine.